

ABSTRACT

An oil-free pulser design can be used to produce an excimer or molecular fluorine laser system that is lighter, cheaper to produce, and simpler than existing systems. Such designs allow a relatively low DC voltage to be applied to a main transformer, allowing the 5 pulser to be run without oil cooling. This relatively low voltage can be increased to the necessary voltage level, such as on the order to 12 kV to 15 kV, needed to drive the laser system. This transference can be accomplished using standard components, such as a pair of capacitor elements that are pulse-charged in parallel, but can be discharged in series following a reversal of charge on one of the capacitor elements.